CHAPTER 9

The Monitoring System Forms MS-001 MS-002 MS-003

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INTRODUCTION TO THE MONITORING SYSTEM FORMS

If you are renewing your ROP and are keeping all applicable requirements the same and not proposing any new ones, you do not have to complete any Monitoring System forms. Rule 213(3) requires that each ROP specify testing, monitoring, recordkeeping, and reporting that is sufficient for making a compliance determination for all emission limitations and standards. These conditions are referred to as "Periodic Monitoring." Periodic monitoring requirements are especially important because Rule 213(3)(c)(i) requires semi-annual reports certifying compliance with all emission limitations and a description of any deviations from the permit requirements during the reporting cycle. If you proposed any monitoring/recordkeeping, testing/sampling, or reporting requirements on an AR-002 form, you will need to complete one of the three Monitoring System (MS) Forms. The MS forms identify the proposed periodic monitoring system that will be used to demonstrate compliance with an applicable requirement listed on an AR-002 form (i.e., monitoring and recordkeeping, testing and sampling, or reporting). The type of MS form you need to complete depends on the type of periodic monitoring proposed (see Figure 9-1). If "Propose" is selected on the AR-002 form, the PASS-ROP software will generate the appropriate MS form. If you are proposing monitoring and associated recordkeeping, an MS-001 form will be generated. If testing and/or sampling is being proposed, an MS-002 form will be generated. If you are proposing a reporting requirement, an MS-003 form will be generated.

To streamline the form completion process, you can link a single MS form to several applicable requirements of the same type. For example, if an emission unit has several different applicable requirements requiring the same type of proposed monitoring/recordkeeping, you only need to complete one MS-001 (see the "List all Applicable Requirement IDs" field).

For more information about proposing appropriate monitoring/recordkeeping, testing/sampling, and reporting, refer to the Periodic Monitoring document *Procedures for Evaluating Periodic Monitoring Submittals in Renewable Operating Permits* and the technical guidance document *Compliance Assurance Monitoring*, which are available via the AQD website at www.michigan.gov/deqair (select "Permits," "Renewable Operating Permits," then "Background & Support Information").

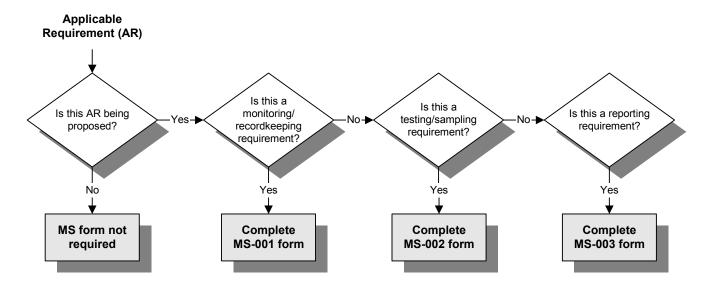
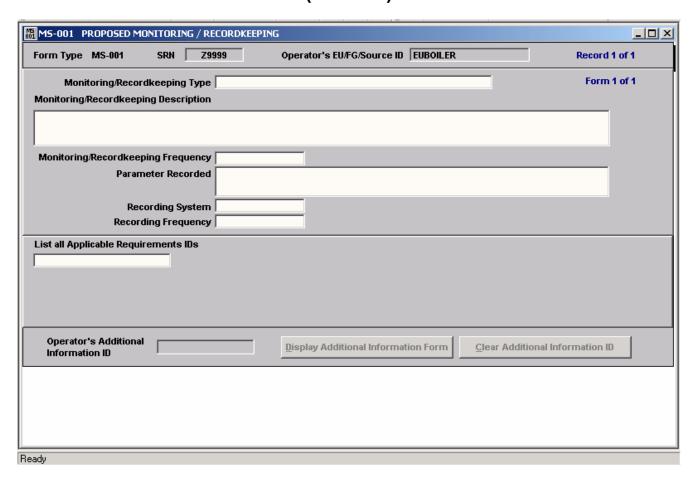


Figure 9-1: MS Forms Decision Tree

Introduction to MS Forms 9-1

THE PROPOSED MONITORING / RECORDKEEPING FORM (MS-001)



FORM OVERVIEW

The Proposed Monitoring/Recordkeeping Form, MS-001, is used to identify each monitoring/recordkeeping requirement identified on an AR-002 form that is being "proposed." Monitoring/recordkeeping is used to evaluate the processes, operations, emissions, or other aspects of a facility over a period of time. Monitoring/recordkeeping must provide reliable data from a relevant time period to demonstrate compliance with the permit requirements.

Records maintenance is not the same as recordkeeping and need not be included on this form. Records maintenance includes keeping records on file of items such as dates, MSDS sheets, solvents used, Start-up/Shut-down/Malfunction plans, preventative maintenance plans, or equipment ID lists. Specification sheets that are kept to provide information such as VOC content, fuel oil density, BTU content, or sulfur content of a fuel rather than testing or sampling for these items should also be considered Records Maintenance.

Information regarding a report submittal for monitoring/recordkeeping identified on this form should be provided on an MS-003 form.

Note: You will need to complete this form only if "monitoring/recordkeeping" was selected as the Applicable Requirement Type on the AR-002 form and if "propose" was selected for the Applicable Requirement Origin. If "propose" was NOT selected, you do not need to complete this form.

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FORM RELATIONSHIP



If an applicable requirement identified on an AR-002 form is Monitoring/Recordkeeping and the requirement is being proposed, an MS-001 form will be generated. You link the MS-001 form to the AR-002 by selecting the appropriate Operator's Applicable Requirement ID(s) in Step 7.

FORM COMPLETION INSTRUCTIONS

A blank MS-001 form will be created for each emission unit or flexible group which has an applicable requirement that is proposed and has monitoring and recordkeeping requirements. The Operator's ID field at the top of the form identifies the emission unit or flexible group that this form is associated with (Figure 9-2). If this form is associated with a source-wide applicable requirement the SRN will appear.

The top of the form displays the **Form Type** that is open (MS-001) as well as the facility's State Registration Number (SRN). Also displayed at the top of the form is the Operator's ID to which this MS-001 form is associated. This Operator's ID represents the emission unit or flexible group that is subject to the proposed monitoring/recordkeeping requirement. The SRN will appear in this field if the proposed monitoring/recordkeeping requirement is a source-wide requirement.

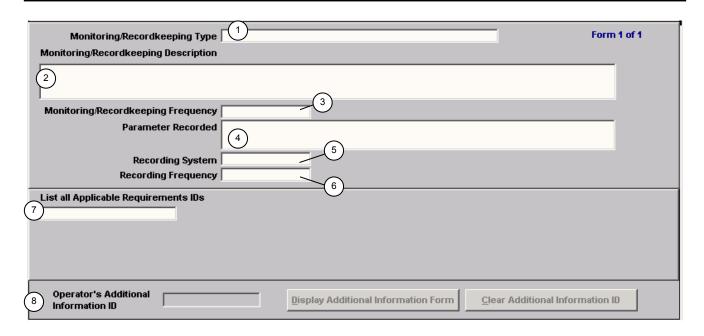


A record counter that identifies the record currently displayed appears in the upper-right corner (Figure 9-2). On this form, "Record 1 of 1" indicates that Record 1 of 1 total records is currently displayed on the screen. The number in this counter will correspond to the number of emission units or flexible groups with new or proposed applicable requirements that have monitoring/recordkeeping requirements (entered on the AR-002 form).

Another counter will track the Proposed Monitoring/Recordkeeping Form displayed (Figure 9-2). This is the number of MS-001 forms associated with the emission unit or flexible group identified at the top of the screen. For example, if two applicable requirements are proposed that require monitoring/recordkeeping for an emission unit and the monitoring methods are different for each, you will need to create two separate forms.

To move to a different requirement record, use the arrow buttons on the tool bar or click on the browse button.

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- 1. **Monitoring/Recordkeeping Type:** Select the type of monitoring/recordkeeping system that is used to demonstrate compliance.
 - Continuous Emissions Monitoring System (CEMS/COMS) A fixed monitoring system operating
 continuously with a specified sampling frequency and averaging time to measure emissions or the
 opacity of flue gases. A COMS measures the amount of light blocked by the particulate matter in the
 stack as percent opacity.
 - Parametric Monitoring/Recordkeeping A system that tracks process operating data and/or control data and uses the data as indicators for emissions. Parameters that may be measured include: vapor pressure, pressure drop, air flow, liquid flow, temperature, viscosity, pH, breakthrough, horsepower, water to fuel ratio, pounds of pollutant per time period, pounds of VOC per gallon applied coating solids, or visible emissions. Predictive Emission Monitoring Systems (PEMS) and Recordkeeping are also parametric monitoring systems. A PEMS predicts emissions using an established correlation between the monitored parameter values and the emission rates. A recordkeeping system keeps specific detailed records of measurable information.
 - Other Complete an Al-001 form to describe the monitoring system if it is not a continuous monitoring system or parametric monitoring.

NOTE: Recordkeeping is used in conjunction with or is considered part of most other monitoring systems. However, recordkeeping may be used as the monitoring system to record things such as usage rates, operating schedules, or production rates. Recordkeeping may also be a requirement of NSPS or NESHAP regulations. Records may be used to directly verify compliance with permit conditions. If Recordkeeping is the type of monitoring, describe this in Item 2 and provide all information in Items 3 - 7. Records Maintenance is not the same as recordkeeping and does not need to be included on this form.

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- 2. Monitoring/Recordkeeping Description: Enter a complete detailed description of the monitoring/recordkeeping system in this field. Include the manufacturer and model of the monitor; the pollutant/parameter being monitored; the monitor location (e.g. inlet, outlet, process); whether the monitor is fixed, portable, or remote; the Data Acquisition System (DAS); monitoring duration (if non-continuous); data recording method and frequency; and any other pertinent information. If the monitoring portion of the system is a CEMS or NCEMS, include the specific type from the following list:
 - **Extractive**: The system extracts stack gas from the stack/vent and sends the sample to an analyzer.
 - **Extractive/dilution**: The system extracts stack gas from the stack/vent, dilutes the sample with conditioned air and sends the sample to an analyzer.
 - **Path insitu**: This measures the gas concentration in a stack/vent along a path greater than 10 percent of the stack diameter.
 - **Point insitu**: This measures the stack gas concentration along a path less than or equal to 10 percent of the stack diameter.
- 3. Monitoring/Recordkeeping Frequency: Click on this field and a drop-down list containing your frequency choices will appear. Select the most appropriate monitoring/recordkeeping frequency. The frequency is how often the data is collected for analysis. If the monitor is used at more than one site for the same pollutant, indicate the site with the most frequent monitoring/recordkeeping. Complete an Al-001 form to describe any variances in monitoring/recordkeeping frequency.
- **4. Parameter Recorded:** Enter a description of the parameters that will be recorded. Parameters that may be measured include: vapor pressure, pressure drop, air flow, liquid flow, temperature, viscosity, pH, breakthrough, horsepower, water to fuel ratio, pounds of pollutant per time period, pounds of VOC per gallon applied coating solids, visible emissions, usage rates, operating schedules, production rates, VOC content, fuel oil density, BTU content or sulfur content of a fuel, and dates.
- **5. Recording System:** Click on this field and a drop-down list containing recording system choices will appear. Select the recording used. Recording may be manual such as written logs or automated such as strip charts, circular charts, or database updates. Complete an Al-001 form to describe any different type of recording system.
- **6. Recording Frequency:** Click on this field and a drop-down list containing frequency choices will appear. The frequency is how often the data is recorded. Select the appropriate recording frequency for the recordkeeping. Complete an Al-001 to describe any variations in recording frequency.
- 7. List all Applicable Requirement IDs: Click on this field and a list containing all the Applicable Requirement IDs associated with this emission unit or flexible group will appear (these IDs were created on the AR-002 form). Select the Applicable Requirement ID(s) for which monitoring/recordkeeping is being used to demonstrate compliance and can be represented by this MS-001 form. To add or delete an Applicable Requirement ID, choose Edit on the menu bar and select Add Applicable Requirement or Delete Applicable Requirement.

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8. Operator's Additional Information ID: An Additional Information Form (AI-001) may be used to supplement any of the information required on this form. Click on the "Display Additional Information Form" button to associate this form with an AI-001 form. When you click on this button either a blank AI-001 form will be generated for you to complete or a display window that contains AI-001 forms that have been created and not linked to another form will appear. If the display window appears select one of the AI-001 forms that have already been created and click "OK" or choose "New" to generate a blank AI-001 form. Refer to Chapter 11 for instructions on how to complete the AI-001 form and create an Operator's Additional Information ID.

If an Operator's Additional Information ID appears in this field and you would like to view the AI-001 form associated with it, click on the "Display Addition Information Form" button. If you would like to break the link to this form, click on the "Clear Additional Information ID" button. Although the ID will be cleared, the AI-001 form will still exist and can be linked to another form or deleted. Refer to Chapter 11 for guidance on deleting an AI-001 form.

ADDING A PROPOSED MONITORING / RECORDKEEPING FORM

In some instances an emission unit or flexible group may have different proposed applicable requirements that require different types of monitoring/recordkeeping (e.g. PEM and CEM) and therefore require more than one MS-001 form. Use the following procedure to add a Monitoring/Recordkeeping Form:

- 1. Choose **Edit** on the menu bar and select **Add Monitoring/Recordkeeping Form**.
- 2. A new MS-001 form will be generated to complete for the emission unit or flexible group identified at the top of the form.

DELETING A PROPOSED MONITORING/RECORDKEEPING FORM

Use the following procedure to delete a proposed Monitoring/Recordkeeping Form from your ROP application:

- 1. Select the record you would like to delete from your application.
- 2. Choose Edit on the menu bar and select Delete Monitoring/Recordkeeping Form.
- 3. The Monitoring/Recordkeeping Form will be deleted from your application.

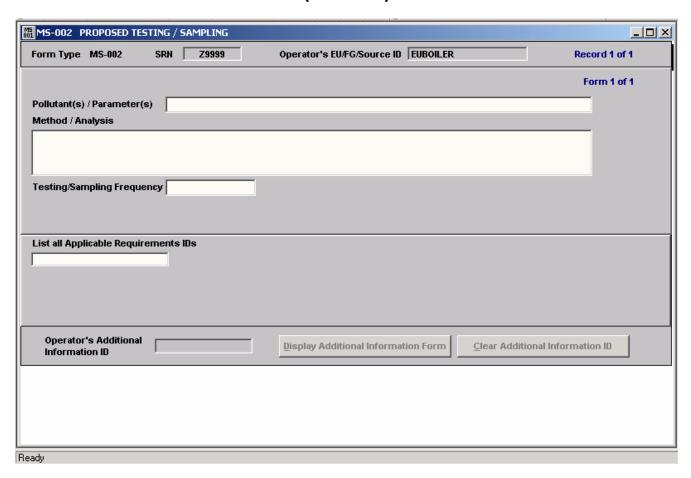
- REMEMBER TO SAVE YOUR CHANGES! -



For assistance with completing the MS-001 form, contact your AQD district office (see Appendix D) or the Clean Air Assistance Program at: (800) 662-9278.

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THE PROPOSED TESTING / SAMPLING FORM (MS-002)



FORM OVERVIEW

The Proposed Testing/Sampling Form, MS-002, is used to identify <u>proposed</u> testing/sampling requirements identified on the AR-002 form. Testing/sampling is used to evaluate the processes, operations, emissions or other aspects of a facility over a period of time. Testing/sampling must provide reliable data from a relevant time period to demonstrate compliance with the permit requirements. An MS-002 must be completed for each proposed testing/sampling requirement identified on the associated AR-002.

You will need to complete this form only if "testing/sampling" was selected as the Applicable Requirement Type **and** if "Proposed" was selected for the Applicable Requirement Origin on the AR-002 form.

Information regarding report submittal for testing/sampling identified on this form should be provided on the MS-003 form.

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FORM RELATIONSHIP

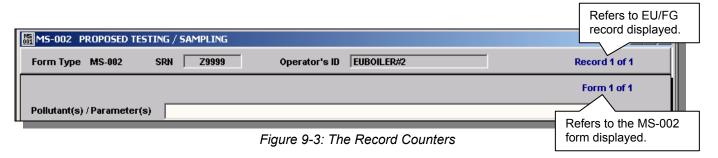


If an applicable requirement identified on the AR-002 form is Testing/Sampling and the requirement is being proposed, an MS-002 form will be generated. The MS-002 is linked to the AR-002 by selecting the appropriate Operator's Applicable Requirement ID(s) in Step 4.

FORM COMPLETION INSTRUCTIONS

A blank MS-002 form will be created for each emission unit or flexible group that has an applicable requirement that is proposed and has testing/sampling requirements. The Operator's ID field at the top of the form identifies which emission unit or flexible group to which this form is associated (Figure 9-3). If this form is associated with a source-wide applicable requirement the SRN will appear.

The top of the form displays the **Form Type** that is open (MS-002) as well as the facility's State Registration Number (SRN). Also displayed at the top of the form is the Operator's ID to which this MS-002 form is associated. The Operator's ID represents the emission unit or flexible group that is subject to the proposed testing/sampling requirement. The SRN will appear in this field if the proposed testing/sampling requirement is a source-wide requirement. These fields are pre-filled and cannot be edited.

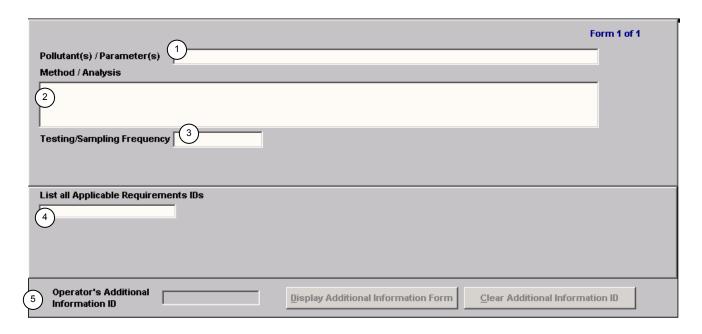


A record counter that identifies the record currently displayed appears in the upper-right corner (Figure 9-3). On this form, "Record 1 of 1" indicates that Record 1 of 1 total records is currently displayed on the screen. The number in this counter should correspond to the number of emission units/flexible groups with new or proposed applicable requirements that have testing/sampling requirements (entered on the AR-002 form).

Another counter will track the Proposed Testing/Sampling Form displayed (Figure 9-3). This is the number of MS-002 forms associated with the emission unit or flexible group identified at the top of the screen. For example if two applicable requirements are proposed that require testing/sampling for an emission unit and the testing methods are different for each, you will need to create two separate MS-002 forms.

To move to a different requirement record, use the arrow buttons on the tool bar or click on the browse button.

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- 1. Pollutant(s)/Parameter(s): Enter the pollutants or parameters that represent the measurable information being tested or sampled. More than one parameter or pollutant may be listed for a given system. Some examples of pollutants/parameters are listed below.
 - a. Stack Testing is used to determine emissions of regulated air contaminants. These include criteria pollutants, non-criteria pollutants, metals, and HAPs. Exhaust gases are collected directly from a discharge stack. Stack testing results that have been evaluated and accepted by the AQD are used to demonstrate compliance with permit requirements.
 - b. Sampling is used for fuels, coatings, waste, process gas, or other materials to determine the make-up or specific content of the material. Parameters that can be measured using sampling include such items as BTU or sulfur content of a fuel, VOC content of a coating, fuel oil density, or PCB content of waste oil. Information from the analysis is used to directly verify compliance with permit conditions. Sample collection may be performed manually or by an automated system.
- 2. **Method/Analysis:** Enter the reference for the testing/sampling method for each pollutant or parameter identified in Step 1 (e.g., EPA Method 24 for VOCs, Michigan Reference Test Method 5B or 5C for particulates). If the method/analysis is not an established method, complete an AI-001 form to describe any variances in method/analysis.
- 3. Testing/Sampling Frequency: Click on this field and select the appropriate testing or sampling frequency. The frequency is how often the data is collected for analysis. If the testing/sampling is done at more than one site for the same pollutant, indicate the site with the most frequent testing/sampling. If you choose "Other," complete an Al-001 form to describe any variances in testing/sampling frequency.
- 4. List all Applicable Requirement IDs: Click on this field and a list containing all the Applicable Requirement IDs associated with this emission unit or flexible group will appear (these IDs were created on the AR-002 form). Select the Applicable Requirement ID(s) for which testing/sampling

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is being used to demonstrate compliance and can be represented by this MS-002 form. To add or delete an Applicable Requirement ID, choose **Edit** on the menu bar and select **Add Applicable Requirement** or **Delete Applicable Requirement**.

5. Operator's Additional Information ID: An Additional Information Form (AI-001) may be used to supplement any of the information required on this form. Click on the "Display Additional Information Form" button to associate this form with an AI-001 form. When you click on this button either a blank AI-001 form will be generated for you to complete or a display window that contains AI-001 forms that have been created and not linked to another form will appear. If the display window appears select one of the AI-001 forms that have already been created and click "OK" or choose "New" to generate a blank AI-001 form. Refer to Chapter 11 for instructions on how to complete the AI-001 form and create an Operator's Additional Information ID.

If an Operator's Additional Information ID appears in this field and you would like to view the AI-001 form associated with it, click on the "Display Addition Information Form" button. If you would like to break the link to this form, click on the "Clear Additional Information ID" button. Although the ID will be cleared, the AI-001 form will still exist and can be linked to another form or deleted. Refer to Chapter 11 for guidance on deleting an AI-001 form.

ADDING A PROPOSED TESTING / SAMPLING FORM

In some instances an emission unit or flexible group may have different proposed applicable requirements that require different testing/sampling parameters and therefore require more than one MS-002 form. Use the following procedure to add a Testing/Sampling Form:

- 1. Choose **Edit** on the menu bar and select **Add Testing/Sampling Form**.
- 2. A new MS-002 form will be generated to complete for the emission unit or flexible group identified at the top of the form.

DELETING A PROPOSED TESTING / SAMPLING FORM

Use the following procedure to delete a Proposed Testing/Sampling Form from your ROP application:

- 1. Select the record you would like to delete from your application.
- 2. Choose **Edit** on the menu bar and select **Delete Testing/Sampling Form**.
- 3. The Testing/Sampling Form will be deleted.

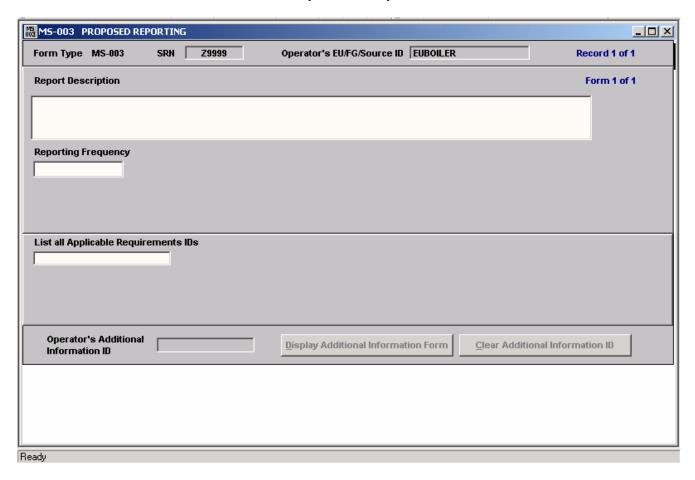
- REMEMBER TO SAVE YOUR CHANGES! -

NEED HELP?

For assistance with completing the MS-002 form, contact your AQD district office (see Appendix D) or the Clean Air Assistance Program at: (800) 662-9278.

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THE PROPOSED REPORTING FORM (MS-003)



FORM OVERVIEW

The Proposed Reporting Form, MS-003, is used to identify each reporting requirement identified on the AR-002 that is being <u>proposed</u>. Reporting is used to summarize the evaluation of the processes, operations, emissions, or other aspects of a facility over a period of time. Reporting must provide reliable data from a relevant time period to demonstrate compliance with the permit requirements.

Complete this form for all reporting that must be submitted, whether reporting is part of a monitoring system identified on an MS-001, testing/sampling identified on an MS-002, or if it is used alone as a method of monitoring. This form is not required if submittal of a report is not required as part of a monitoring/recordkeeping system or testing/sampling.

Note: You will need to complete this form only if "Reporting" was selected as the applicable requirement type **and** "Propose" was selected as the Applicable Requirement Origin on the AR-002 form.

FORM RELATIONSHIP

MS-003 9-13



If an applicable requirement identified on the AR-002 form is Reporting and the requirement is being proposed, an MS-003 form will be generated. You link the MS-003 form to the AR-002 by selecting the appropriate Operator's Applicable Requirement ID(s) in Step 3.

FORM COMPLETION INSTRUCTIONS

A blank MS-003 form will be created for each emission unit or flexible group which has an applicable requirement that is <u>proposed</u> and has reporting requirements. The Operator's ID field at the top of the form identifies which emission unit or flexible group this form is associated with (Figure 9-4). If this form is associated with a source-wide applicable requirement the SRN will appear.

The top of the form displays the **Form Type** that is open (MS-003) as well as the facility's State Registration Number (SRN). Also displayed at the top of the form is the Operator's ID to which this MS-003 form is associated. The Operator's ID represents the emission unit or flexible group that is subject to the proposed reporting requirement. The SRN will appear in this field if the proposed reporting requirement is a source-wide requirement. These fields are pre-filled and cannot be edited.



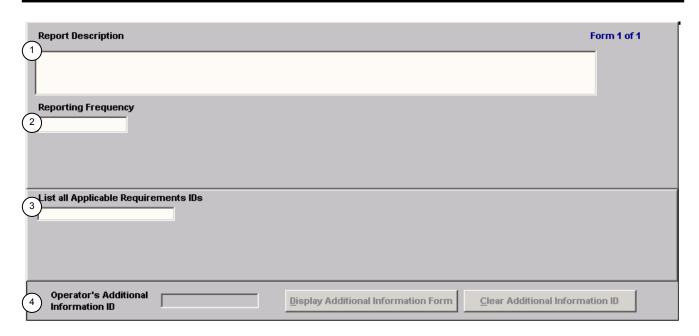
Figure 9-4: The Record Counters

A record counter, which identifies the record currently displayed appears in the upper-right corner (Figure 9-4). On this form, "Record 1 of 1" indicates that Record 1 of 1 total records is currently displayed on the screen. The number in this counter should correspond to the number of emission units/flexible groups with proposed applicable requirements that have reporting requirements (entered on the AR-002 form).

Another counter will track the Proposed Reporting Form displayed (Figure 9-4). This is the number of MS-003 forms associated with the emission unit or flexible group identified at the top of the screen. For example, if two applicable requirements are proposed for an emission unit that require different reports, you will need to create two separate MS-003 forms.

To move to a different requirement record, use the arrow buttons on the tool bar or click on the browse button.

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- 1. Report Description: Enter a brief description of the content of all reports that must be submitted to the AQD for this applicable requirement (e.g., NSPS excess emission report, NESHAP initial notification, stack test results, annual certification report, emission exceedance report). Complete an AI-001 form if you need to submit a copy of a blank reporting form.
- 2. Reporting Frequency: Click on this field and select the appropriate reporting frequency. The reporting frequency is how often all monitoring data results will be summarized and submitted, in report format to the AQD. The reporting frequency is usually stated in the applicable requirement. If there is more than one reporting frequency, select the most restrictive or frequent. If you choose "Other," complete an Al-001 form to describe any variations in reporting frequency.
- 3. List all Applicable Requirement IDs: Click on this field and a list containing all the Applicable Requirement IDs associated with this emission unit or flexible group will appear (these IDs were created on the AR-002 form). Select the Applicable Requirement ID(s) for which reporting is being used to demonstrate compliance and can be represented by this MS-003 form. To add or delete an Applicable Requirement ID, choose Edit on the menu bar and select Add Applicable Requirement or Delete Applicable Requirement.
- 4. Operator's Additional Information ID: An Additional Information Form (AI-001) may be used to supplement any of the information required on this form. Click on the "Display Additional Information Form" button to associate this form with an AI-001 form. When you click on this button either a blank AI-001 form will be generated for you to complete or a display window that contains AI-001 forms that have been created and not linked to another form will appear. If the display window appears select one of the AI-001 forms that have already been created and click "OK" or choose "New" to generate a blank AI-001 form. Refer to Chapter 11 for instructions on how to complete the AI-001 form and create an Operator's Additional Information ID.

If an Operator's Additional Information ID appears in this field and you would like to view the Al-001 form associated with it, click on the "Display Addition Information Form" button. If you would like to break the link to this form, click on the "Clear Additional Information ID" button.

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Although the ID will be cleared, the Al-001 form will still exist and can be linked to another form or deleted. Refer to Chapter 11 for guidance on deleting an Al-001 form.

ADDING A PROPOSED REPORTING FORM

In some instances an emission unit or flexible group may have different proposed applicable requirements that have different reporting requirements and therefore require more than one MS-003 form. Use the following procedure to add a Reporting Form:

- 1. Choose **Edit** on the menu bar and select **Add Reporting Form**.
- 2. A new MS-003 form will be generated to complete for the emission unit or flexible group identified at the top of the form.

DELETING A PROPOSED REPORTING FORM

Use the following procedure to delete a Proposed Reporting Form from your ROP application:

- 1. Select the record you would like to delete from your application.
- 2. Choose **Edit** on the menu bar and select **Delete Reporting Form**.
- 3. The Proposed Reporting Form will be deleted.

- REMEMBER TO SAVE YOUR CHANGES! -

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